

What is claimed is:

1        1. A wiring structure for semiconductor device,  
2 comprising:

3              a wiring layer that includes copper as main component;  
4 and

5              a crystal grain promotion layer that promotes enlargement  
6 in a crystal grain of the wiring layer.

1        2. The wiring structure for semiconductor device  
2 according to claim 1, wherein:

3              the crystal grain of the wiring layer satisfies a relation  
4 of  $D > 10 \times L$  where D is an average grain diameter of crystal  
5 grain to be enlarged finally in the wiring layer and L is mean  
6 free path of electron.

1        3. The wiring structure for semiconductor device  
2 according to claim 1, wherein:

3              the crystal grain promotion layer is disposed between a  
4 semiconductor or dielectric film and the wiring layer.

1        4. The wiring structure for semiconductor device  
2 according to claim 3, wherein:

3              the crystal grain layer has a good contact with the  
4 semiconductor or dielectric film and the wiring layer and is  
5 of a material that has a low reactivity to the semiconductor  
6 or dielectric film and the wiring layer.

1        5. The wiring structure for semiconductor device

2 according to claim 1, wherein:

3 the crystal grain layer is of high melting point metal,

4 or nitride or carbide of the high melting point metal.

1 6. The wiring structure for semiconductor device

2 according to claim 1, wherein:

3 the crystal grain layer is of a material selected from

4 the group of titanium, tantalum, titanium nitrides, titanium

5 carbides, tantalum nitrides and tantalum carbides.